

Table 4-5 – Single Zone Air-Conditioner Efficiency Deemed Comparable to Duct Sealing

CTZ	Air conditioner		Heat Pump	
	< 65,000 Btu/h SEER/EER	≥ 65,000 Btu/h EER	< 65,000 Btu/h R/EER	≥ 65,000 Btu/h EER
1	13.5/11.2	11.3	13.0/10.6	11.0
2	13.8/11.4	11.5	13.3/11.0	11.5
3	13.2/11.0	11.1	13.0/10.7	11.0
4	13.4/11.1	11.3	13.1/10.9	11.2
5	13.2/11.0	11.0	13.0/10.8	11.0
6	13.1/10.9	11.0	13.1/10.9	11.0
7	13.3/11.0	11.1	13.3/11.0	11.1
8	13.5/11.2	11.3	13.4/11.1	11.3
9	13.7/11.4	11.4	13.6/11.3	11.4
10	13.9/11.5	11.7	13.9/11.5	11.7
11	14.2/11.8	11.9	13.3/11.0	11.7
12	14.0/11.6	11.9	13.3/11.0	11.9
13	14.3/11.9	12.0	13.7/11.4	11.9
14	14.2/11.8	12.0	13.6/11.3	11.9
15	14.5/12.0	12.1	14.5/12.0	12.1
16	14.0/11.6 ¹	12.1 ¹	13.0/10.8	11.7



1. In climate zone 16, the equivalent efficiency system must have high efficiency heating system in addition to the minimum air conditioner efficiency in Table 4-5. A high heating efficiency system has a minimum thermal efficiency of 96% or an AFUE of 94% for furnaces and a minimum HSPF of 8.4 or a COP of 3.8 for heat pumps.

Example 4-19

Question

A new 20 ton single zone system with new ductwork serving an auditorium is being installed. Approximately 1/2 of its ductwork on the roof. Does it need to be leak tested?

Answer

Probably not. Although this system meets the criteria of being single zone and having more than 1/4 of the duct surface area on the roof, the unit probably serves more than 5,000 ft² of space. Most 15 and 20 ton units will serve spaces that are significantly larger than 5,000 ft². If the space is 5,000 ft² or less the ducts do need to be leak tested per §144(k).

Example 4-20

Question

A new 5 ton single zone system with new ductwork serving a 2,000 ft² office is being installed. The unit is a down discharge configuration and the roof has insulation over the deck. Does the ductwork need to be leak tested?

Answer

Probably not. Although this system meets the criteria of being single zone and serving less than 5,000 ft² of space, it does not have 1/4 of its duct area in one of the spaces listed in §144(k). With the insulation on the roof and not on the ceiling, the plenum area likely meets the criteria of indirectly conditioned so no leakage testing is required.